INSTALLATION , OPERATION SERVICE & PARTS MANUAL

ES, EL & ET STEAM JACKETED KETTLES

MODELS

ES25	*ML-52642*
ES30	*ML-52643*
EL40	*ML-52644*
ES60	*ML-52645*
EL80	*ML-52646*
ET100	*ML-52647*
ET125	*ML-52648*
ET150	*ML-52649*



For additional information on Vulcan-Hart Company or to locate an authorized parts and service provider in your area, visit our Web site at www.vulcanhart.com

VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791

FORM 30965 Rev. A (06-03)

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Installation, Operation and Care of MODEL ES, EL & ET STEAM JACKETED KETTLES

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

GENERAL

Your Vulcan steam jacketed kettle is produced with quality workmanship and material. Proper installation, usage and maintenance will result in many years of satisfactory performance.

Vulcan-Hart Company suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

INSTALLATION

Prior to installation verify that the electrical service agrees with the specifications on the machine data plate located inside the front cover at the lower left.

UNPACKING

This kettle was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment. Immediately after unpacking, check for possible shipping damage. If the kettle is found to be damaged, save the packaging material and contact the carrier within 15 days of delivery.

LOCATION

Position the kettle in its final location. Check that there are sufficient clearances for operating and servicing the kettle, and for proper clearance of the cover when raised. The kettle draw off faucet should be located near a floor drain.

LEVELING

Place a spirit level on the rim of the kettle with the cover open. Adjust the feet to level the kettle left-to-right and front-to-back.

INSTALLATION CODES AND STANDARDS

Vulcan kettles must be installed in accordance with:

In the United States:

1. Local codes.

2. National Electrical Code ANSI/NFPA-70 (latest edition).

3. ANSI NFPA Standard #96 "Vapor Removal from Cooking Equipment," (latest edition), available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

In Canada:

1. Local codes.

2. CSA Standard C22.1 Canadian Electrical Code, Part 1.

ELECTRICAL CONNECTIONS

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH TO INDICATE THAT YOU ARE WORKING ON THE CIRCUIT.

Make required electrical supply connections at the junction box located below the control box. There is no opening in the junction box for supply line conduit. The box is a sealed box and the conduit connection should be made with fittings of the water resistant type. Be sure the supply wiring and the circuit protection are adequate for the K.W. load drawn by the kettle. The wiring diagram is located on the back side of the removable control cover. Use copper wire suitable for at least 75°C temperature.

If the kettle is for operation on an electric supply of over 240 volts, a transformer is provided to reduce the control circuit voltage to 120 volts.

ELECTRICAL DATA CHART

NOMINAL AMPS PER LINE WIRE

	3 PHASE			1 PHASE	
K.W.	208	230-240	440-460-480	208	230-240
12	33.4	28.9	14.5	57.6	50.0
18	50.0	43.4	21.7	86.5	75.0
24	66.7	57.8	28.9	115.4	100.0
36	100.0	86.8	43.4	—	—
43.2	119.9	104.0	52	—	—

Each of the two elements draws one-half of the above listed total amperage.

FAUCET CONNECTION (Optional)

If the optional faucet assembly is to be installed, connect as required.

OPERATION

WARNING: THE KETTLE AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING AND SERVICING THE KETTLE.

BEFORE FIRST USE

Using a non-corrosive, grease-dissolving commercial cleaner, clean the protective metal oils from all surface parts and interior of the kettle. Follow the cleaner manufacturer's directions. Rinse thoroughly with warm water to remove all traces of the cleaner. Drain the kettle. Wipe dry with a soft clean cloth.

CONTROLS

On-Off Switch	— Turns power to the kettle on or off.
Thermostat Switch, Low Water Cutoff Switch, Limit Switch	— These three switches are wired in series and control the supply of energy to the heating elements. Opening any one of these pressure switches will shut off the power supply to the heating elements.
Thermostat	— Senses the temperature in the steam jacket. At a dial setting of 5 to 6, it will cut power off as the pressure gauge needle moves off zero. The higher dial settings are for cooking, the lower ones for holding. At the higher dial settings, the steam pressure in the jacket will drop to 2 to 2 $^{1}/_{2}$ psi after the thermostat cuts the power off and before it cuts it on.
Low Water Cutoff Switch	— Cuts off power to the heating elements if the jacket distilled water level is too low.
Pressure Relief Valve, Pressure Limit Switch	— Protect the kettle against excessive pressure should the thermostat malfunction. The pressure relief valve is rated so that it will relieve generated steam faster than the heating elements can generate it.
Pressure Gauge	— Indicates pressure in the jacket.
Sight Glass Assembly	— Visually shows the distilled water depth in the steam jacket.
Thermostatic Air Vent	— Lets air out of jacket as steam is generated; closes at approximately 180°F to prevent the steam from escaping.
Fill Assembly	— Location for adding distilled water to the jacket. It is equipped with a manual valve plus a check valve to prevent a discharge should the manual valve be inadvertently opened while the jacket is under pressure.
Food Draw-Off Valve	— Allows food and liquid to be drawn off from the kettle.

FILLING THE WATER JACKET

APPLIANCE FAILURE CAUSED BY INADEQUATE WATER QUALITY IS NOT COVERED UNDER WARRANTY.

Fill the outer jacket of the kettle to the top of the band on the gauge glass with a chemically pure distilled water, along with a suitable rust inhibitor.

It should not be necessary to frequently add distilled water to the jacket, as little distilled water is lost in normal operation.

USING THE KETTLE

Before use, preheat the kettle empty. Set the thermostat at No. 12 or No. 13. When the orange light goes out, load food and set thermostat dial for desired cooking temperature.

KETTLE FOOD DRAW-OFF VALVE

When the food draw-off valve is turned off (no liquid or food product flow), the valve handle will point to either the 9 o'clock or 3 o'clock position. To open (allowing liquid or food product flow), slowly pull handle forward. With the valve handle pointing to the 6 o'clock position, the valve is in a fully open position. This food draw-off valve system requires a right or left turn to close off food flow.

To allow for evenly mixed food products to flow into a food service pan or stock pot, first thoroughly stir the food product in the kettle before opening the food draw-off valve. Pans or pots may be placed on a portable dolly for easy movement and handling.

CLEANING

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY BEFORE CLEANING.

After Each Use

Clean and flush the kettle immediately after each use, especially if the product cooked contained salt or vinegar in any concentration.

Daily — Kettle Food Draw-Off Valve

1. With kettle empty, pull valve handle to the 7 o'clock position. (A pin locks the valve plug into the valve body and you can only remove or replace the valve plug when the valve handle is in the 7 o'clock position.) Kettles built before July 2003 thru March 1992 - the removable position is at 4 o'clock. Kettles built prior to March 1992 - the removable position is at 6 o'clock.

2. Pull tapered plug from valve body.

3. Using warm soapy water, wash the entire valve body and open area into the kettle interior.

4. Wash the interior and exterior of the valve plug. **CAUTION: Do not drop or hit the valve plug.** This will nick or dent the soft metal.

5. After washing, lubricate the valve body and valve plug with Petro-Gel lubricant. Make sure all interior mating surfaces are covered with this lubrication. This lubrication must be done every day after use. If the food draw-off valve plug and inside of valve body are not lubricated, undesirable leakage can occur, or the valve plug could stick in a partially open position when the kettle is up to cooking temperature and the operator attempts to open the draw-off valve.

   A 4-ounce tube of Petro-Gel is furnished with your kettle. You can reorder through your local service agency or food service equipment dealer.

6. Each draw-off valve body and removable tapered draw-off plug is stamped with a set of corresponding numbers. After cleaning and lubricating, make sure the body and plug numbers match before reinserting the tapered plug.

7. Examine the valve plug and valve body for nicks and deep scratches. Do not attempt to push or force the valve plug into the valve body if there are any obstructions, nicks, or deep scratches in either the plug or body. Contact your local Vulcan authorized servicer.

8. Carefully slide the valve plug into the valve body. **CAUTION: Do not attempt to slide valve plug into valve body when valve handle is at any other than the 7 o'clock position.** This will damage the pin and the plug will not seat properly, causing leakage between the valve body and plug. Kettles built before July 2003 thru March 1992 - the removable position is at 4 o'clock. Kettles built prior to March 1992 - the removable position is at 6 o'clock.

Sight Glass Assembly

This component indicates the distilled water level inside the jacket and should be checked at least once a day. The correct distilled water level is a point one-half the height of the glass. Extreme murkiness indicates that the kettle jacket should be cleaned.

MAINTENANCE

WARNING: THE KETTLE AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING AND SERVICING THE KETTLE.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH TO INDICATE THAT YOU ARE WORKING ON THE CIRCUIT.

PERIODIC MAINTENANCE

1. **Pressure Relief Valve**

   This protection device should be opened at least once a day to avoid lime build-up. Replace if leakage occurs or it opens below rated p.s.i.

2. **Low Water Cut-Off**

   This device should be removed and inspected for lime build-up at least once a year. The float must move freely in its cage. Clean if necessary. Replace if lime or sludge cannot be removed to allow the float to move freely.

3. **Sight Glass Assembly**

   This unit indicates the distilled water level inside the jacket and should be checked at least once a day. The correct distilled water level is a point one-half the height of the glass. Extreme murkiness indicates the kettle jacket should be cleaned.

4. **Draw-Off Valve**

   The faces of this valve should be lubricated with Petro-Gel daily to prevent sticking.

5. **Vent**

   Annually, when cool, check the air vent and clear any obstructions.

6. **Kettle Jacket Fluid**

   Draining the water from the jacket (or flushing the jacket) is not required or desirable at frequent intervals and should be done only when there is evidence of scale or sludge inside the jacket.

   To drain the jacket, remove the drain plug on the exterior bottom plate of the kettle.

   The jackets are constructed of type 304 stainless steel, but they can pit and corrode under adverse conditions. Prompt, careful cleaning will help prevent this. To clean and flush the jacket, remove the low water cutoff switch and insert a water hose through this opening. When the jacket is refilled, always use chemically pure water, along with two ounces of a boiler feed water treatment compound. A 6-ounce bottle of treatment compound is available from Vulcan-Hart.

SERVICE

WARNING: THE KETTLE AND ITS PARTS ARE HOT. USE CARE WHEN OPERATING, CLEANING AND SERVICING THE KETTLE.

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH TO INDICATE THAT YOU ARE WORKING ON THE CIRCUIT.

GENERAL NOTES

The signal light marked "Power On" glows when the On-Off switch is turned to ON, and electric power is supplied to the kettle.

The signal light marked "Heat On" glows when the thermostat switch is closed (thermostat calling for heat).

The thermostat, with the dial at the highest setting, should cut the power off at a jacket pressure of 12 to 13 p.s.i. and before the pressure relief valve opens.

The pressure limit switch is set to open when the jacket pressure reaches 15 p.s.i. and to close when jacket pressure drops to 6 p.s.i.

The On-Off switch is a two-pole switch and opens both lines of the control circuit. The thermostat switch, the low water cut-off switch and the pressure limit switch are single-pole switches.

SERVICING PROCEDURES

WARNING: DISCONNECT ELECTRICAL POWER SUPPLY AND PLACE A TAG AT THE DISCONNECT SWITCH TO INDICATE THAT YOU ARE WORKING ON THE CIRCUIT.

Thermostat

To recalibrate, remove the dial by pulling it forward, and slightly turn the small screw in the center of the hollow dial shaft. Recalibration is indicated if the thermostat, with the dial at the highest setting, fails to shut the power off before the pressure relief valve opens, or if it shuts the heating elements off before the jacket pressure reaches 13 p.s.i.

To replace the thermostat, remove two screws under the dial, disconnect the wire leads, unscrew the packing gland around the capillary tube where it enters the jacket, unscrew the bushing the gland was threaded into, and pull the bulb from the jacket.

When installing the new thermostat, insert the bulb first. Be careful that the capillary tube is not bent sharply, that the packing gland seal is pressure tight, that the wire leads are clean and terminal screws are tight, and that the capillary tube is positioned so there is good clearance ($^{3}/_{4}$" minimum) between it and any uninsulated electrically live part.

Low Water Cut-Off

This service is indicated if the distilled water in the steam jacket is at the proper level but the switch does not close to make the circuit across the two top terminal screws (the bottom two are not used), if leakage is observed from the switch case, or if the distilled water level is near the bottom of the gauge glass and the switch does not open.

To replace or to check the switch, remove the lead wires, remove the two screws and the metal cover over the switch. Remove the four flat head screws holding the switch in place, then remove the switch. To check the switch, gently press the bottom of the rocker toward the switch body; this should close the switch. Then press the rocker in the other direction; this should open the switch. When installing the switch, be sure the word "TOP" on the switch is at the top.

To replace the complete unit, remove the lead wires, remove the ten screws around the base of the metal switch cover and pull the complete unit forward. When installing the new unit, be sure the word "TOP" on the switch is at the top and that the side of the square terminal block is vertical.

Pressure Limit Switch

This service is indicated if a circuit check shows the switch is not closed or if the switch is opening at too low a pressure. It was factory set to open at 15 p.s.i. and to close at 6 p.s.i.

To remove the switch for service, disconnect the tubing from the bottom of the unit and remove two screws with nuts which anchor the mounting bracket for the unit.

The cut-out and cut-in pressure setting of the switch is shown on the dial and is adjustable with slotted square shanks at the top of the case. Adjust the cut-out pressure setting first. If this adjustment does not cure the trouble, replace the complete unit.

Magnetic Contactor

This service is indicated if a circuit check shows power at the proper voltage is supplied to the magnet coil terminals, yet the contactor fails to open or close as it should or it chatters or hums.

A chatter or a humming noise usually is the result of dirt or lint on the armature pole faces or around the armature core so that the magnet coil does not completely pull the armature into the sealed position. This can usually be corrected by blowing or wiping the pole faces clean. The pole faces are at the bottom of the contactor directly behind the magnet coil terminals.

To inspect the contactor contact points, on 70 and 125 ampere contactors, remove the grey color plastic arc shield at the top of the contactor by removing the two screws holding it in place. The 50 ampere contactor has no arc shield. For a better view or for other service, remove the two wires to the magnet coil at the coil terminals (terminals at the bottom of the contactor), remove the two screws holding the coil in place and lift the coil and armature assembly out.

Pitted contacts should be replaced. These may be obtained from Vulcan-Hart.

Electric Heating Elements

This service is indicated if a check with an ammeter shows the K.W. input is not proper. Proper amperage for each K.W. input is shown under ELECTRICAL CONNECTIONS in this manual.

To replace an element, drain the kettle jacket. Remove the wire from the element terminals, remove the four bolts in the element flange and pull element out. When replacing the element, always use a new gasket.

Replace On-Off Switch

Remove the large nut on the outside of the control box holding the unit to the box. The switch has two separate contact blocks held by special slotted screws to the back of the switch. It may be necessary to replace only one block. When remounting on the box, be sure the gasket is properly positioned between the switch and inner surface of the control box and the small pin at the top front of the switch fits into the small hole above the large hole in the control box wall.

Replace Signal Light

Remove the screw between the two signal lights in front of the control box. Note the position of the bar, the signal lights and the gaskets and replace with parts in the same position, with the bar against the back surface of the metal ring on the light, and the gasket around the light and between the metal ring and the inner surface of the control box wall.

Replace Pressure Gauge

Disconnect the copper tubing from the back of the gauge, remove two nuts holding the "U" strap in place, remove the "U" strap and remove gauge.

Correct Leaking Draw-Off Valve

Remove the plug from the body of the valve. Examine the tapered surface of each. Carefully dress any raised places with a very fine file or with emery cloth. Do not cut below the surface when removing any raised places. Coat the plug lightly with lapping compound, insert the plug in the body and rotate to seat the plug in the body. Use a medium grade of compound first and finish with a fine grade lapping compound. Valve grinding compound from an automobile supply house is suitable for this.

Clean surface thoroughly after use of lapping compound. Lubricate surfaces lightly with Petro-Gel to prevent the plug from sticking.

SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning the kettle, contact the Vulcan-Hart Service Agency in your area (refer to listing supplied with the kettle), or Vulcan-Hart Company Service Department at the address or phone number shown on the front cover of this manual.

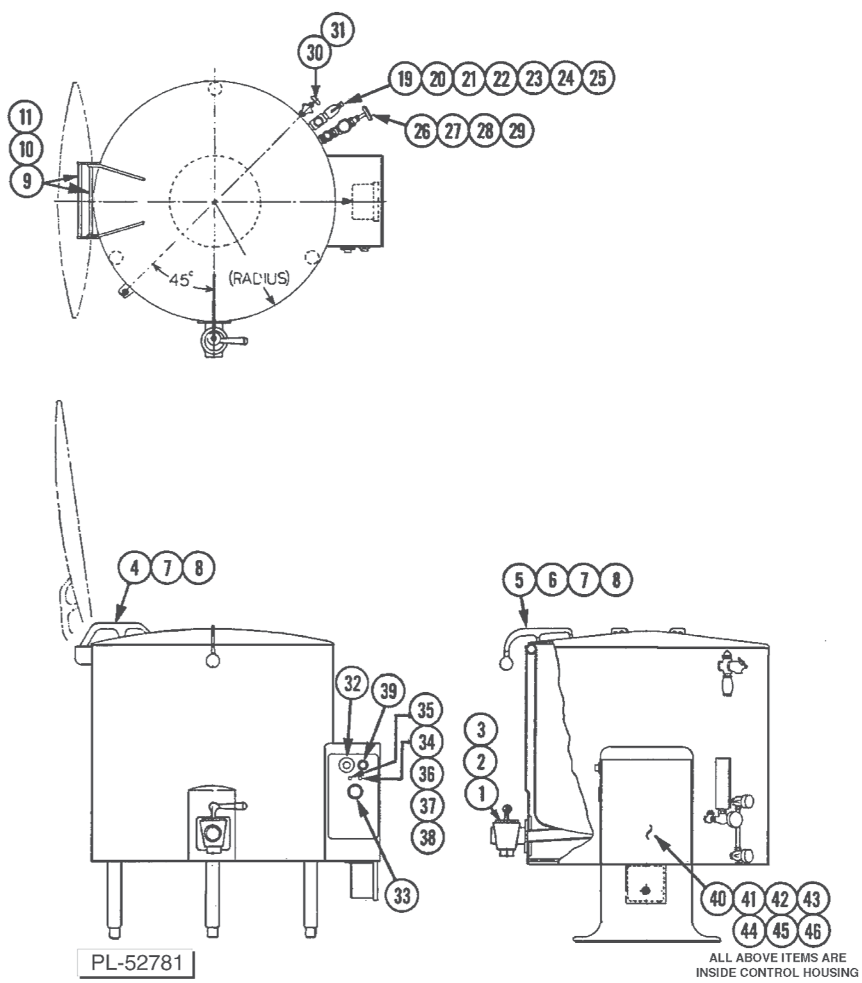
PARTS LIST

NOTE: In ordering parts, always give model number, serial number, volts and phase of the kettle for which they are ordered.

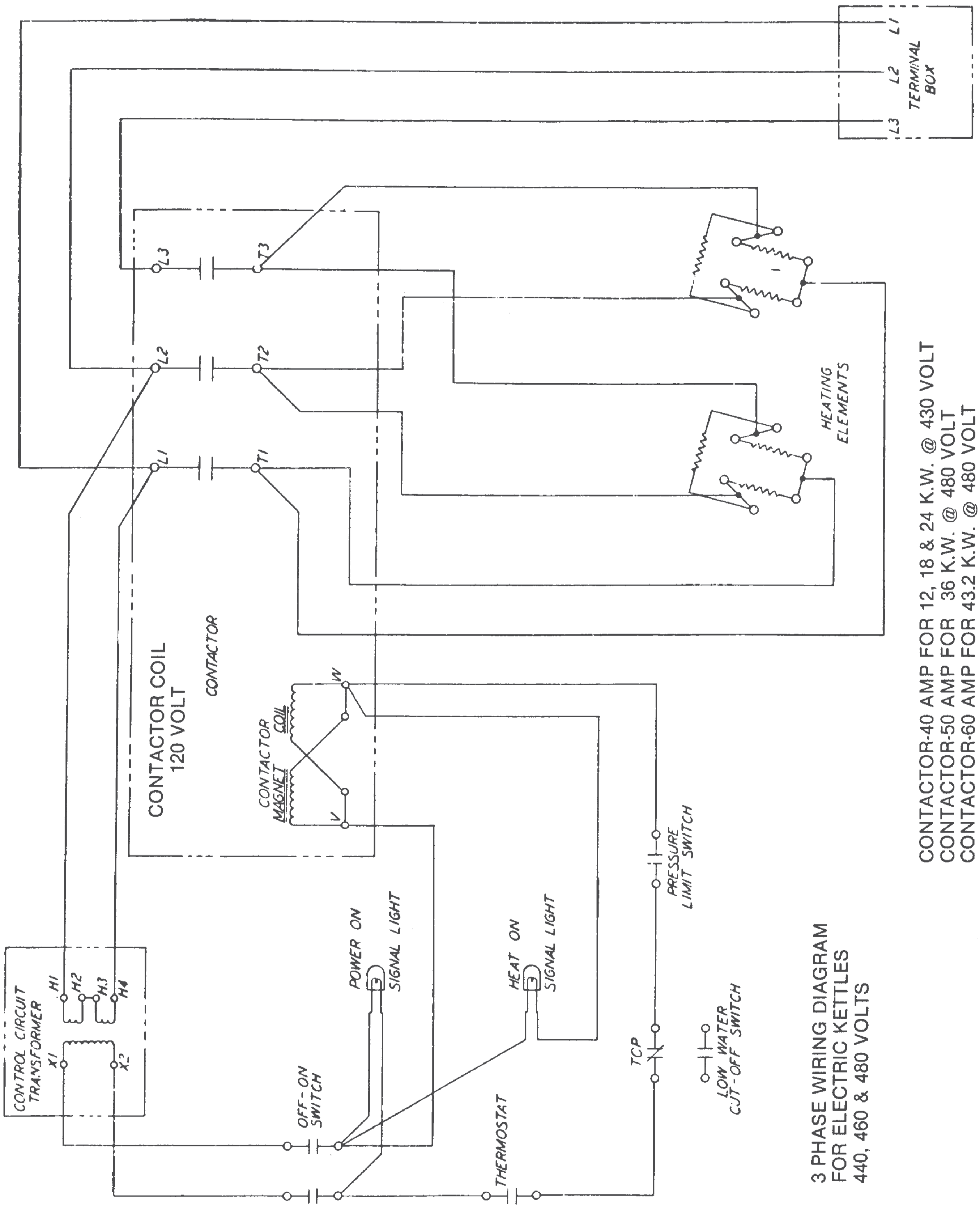
ITEM NUMBER	PART NUMBER	DESCRIPTION	NUMBER REQUIRED
1	836799-1	$1^1/_2$" Faucet (Old Style)	1
	836799-2	$2^1/_2$" Faucet w/2 bolt flange (Old Style)	
	817900	2" Faucet w/4 bolt flange (New Style)	1
	817899	3" Faucet	
2	831713	Gasket for $1^1/_2$" draw off valve	1
	831713	Gasket for 2" draw off valve	
	833394	Gasket for 3" draw off valve	
3	SC-119-36	$1^1/_2$" Draw off valve mounting screw, $^1/_2$-20 x $1^1/_4$"	2
	SC-119-36	2" Draw off valve mounting screw, $^1/_2$-20 x $1^1/_4$"	2
	SC-119-38	3" Draw off valve mounting screw, $^5/_8$-18 x $1^1/_4$"	4
4	831623-10	Cover hinge L.H.	1
	831623-11	Cover hinge R.H.	1
5	817168-2	Cover handle casting	1
6	833213	Cover handle ball	1
7	SC-41-50	Screw, handle & hinge to cover $^1/_4$-20 x $^1/_2$"	6
8	833211	Plastic washer for above	6
9	817115-1	Cover hinge & stop rod - $20^1/_2$" O.D. kettle	2
	817115-2	Cover hinge & stop rod - 25" O.D. kettle	
	817115-3	Cover hinge & stop rod - 29" O.D. kettle	
	817115-4	Cover hinge & stop rod - 33" O.D. kettle	
	817115-5	Cover hinge & stop rod - $36^1/_2$" O.D. kettle	
10	NS-025-04	Hinge rod acorn nut, $^1/_4$"-20	4
11	WL-13-14	Lock washer for above INT $^1/_4$"	4
19	841496-1	Pressure relief valve $^3/_4$" (15 Lb.)	1
	FP-84-16	$^3/_4$" x $^1/_2$" reducing bushing	
20	833239	Air vent $^3/_4$"	1
21	833238	Vacuum breaking check valve, $^1/_2$"	1
22	FP-83-92	Cross $^3/_4$"	1
23	FP-54-27	$^3/_4$" close nipple	1
24	FP-54-08	$^1/_2$" close nipple	1
25	FP-84-16	$^3/_4$" x $^1/_2$" reducing bushing	1
26	836082-1	Fill pipe assembly	1
27	833501	Fill valve	1
28	833648	Check valve	1
29	FP-54-08	$^1/_2$" close nipple	2
30	833493-11	Gauge glass with washers	1
31	833493	Gauge glass assembly complete	1
32	833220	Thermostat with dial	1
33	833152	Pressure gauge	1
34	906440-13	"Power-On" signal light (red)	AR
	906440-11	Signal light (clear)	AR
35	906440-12	"Heat-On" signal light (amber)	AR
36	833483	Signal light gasket	2
37	833176	Signal light clamp bar	1
38	SC-093-05	Clamp bar screw, 8-32 x $^1/_2$"	1
39	906996	"Off-On" switch block (normally open)	1
40	833488	Pressure limit switch	1
41	833486	Pressure limit switch bracket	1
42	880030	Low water cut off, complete	1
	833196-11	Low water cut off, switch only	1
43	880410	Heating element gasket	2
44	SC-113-18	Heating element screw, $^5/_{16}$-18 x 1	8
45	832611-13	Heating element (9 KW, 208V.)	2
	832611-14	Heating element (9 KW, 240V.)	2
	832611-15	Heating element (9 KW, 480V.)	2
	832611-16	Heating element (12 KW, 208V.)	2
	832611-17	Heating element (12 KW, 240V.)	2
	832611-18	Heating element (12 KW, 480V.)	2
	832611-19	Heating element (18 KW, 208V.)	2
	832611-20	Heating element (18 KW, 240V.)	2
	832611-21	Heating element (18 KW, 480V.)	2

ITEM NUMBER	PART NUMBER	DESCRIPTION	NUMBER REQUIRED
45 Cont.	832611-22	Heating element (21.6 KW, 208V.)	2
	832611-23	Heating element (21.6 KW, 240V.)	2
	832611-24	Heating element (21.6 KW, 480V.)	2
	832611-25	Jumper strap for element	AR
	841496-2	10-Lb. Pressure relief valve	1
	833220-11	Thermostat knob	1
	834472	16" Leg	3
46	836804	Contactor 40A (Use on 18KW, 208-240/60/1 and 24KW, 240V, 1Ph & 208-240/60/3)	2
	836805	Contactor 50A (Use on 18 & 36 KW, 240/60/3 and 24KW, 208/60/1)	2
	836806	Contactor 60A (Use on 18 & 36KW, 208/60/3 and 43.2KW, 208-240/60/3)	2
	881654	Contactor 40A, 3P (Use on 18 & 24KW, 480/60/3)	1
	881655	Contactor 50A, 3P (Use on 36KW, 480/60/3)	1
	881656	Contactor 60A, 3P (Use on 43.2KW, 480/60/3)	1
	836807	Box-Contactor Bracket	1
	833651	6 oz. bottle of rust inhibitor (2 ozs. per charge)	
	833652	Faucet lubricant in aerosol can (1 can)	
	833525	Control circuit transformer	
	831912-10	Gasket-50" extrusion	
	833515	Ring (1 1/4 seal)	

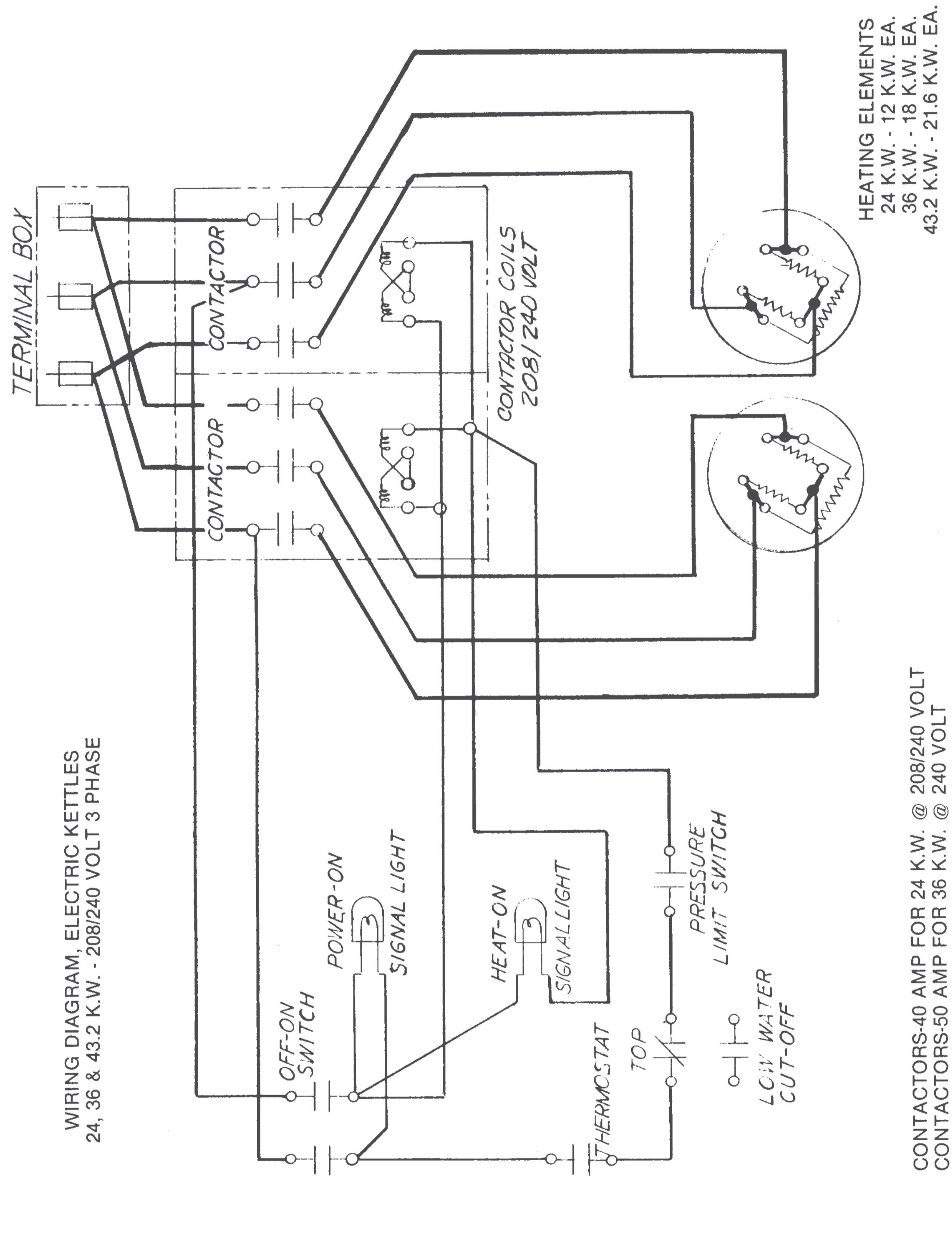
FOR UNITS SHIPPED BEFORE DECEMBER, 1980, CONSULT THE FACTORY.



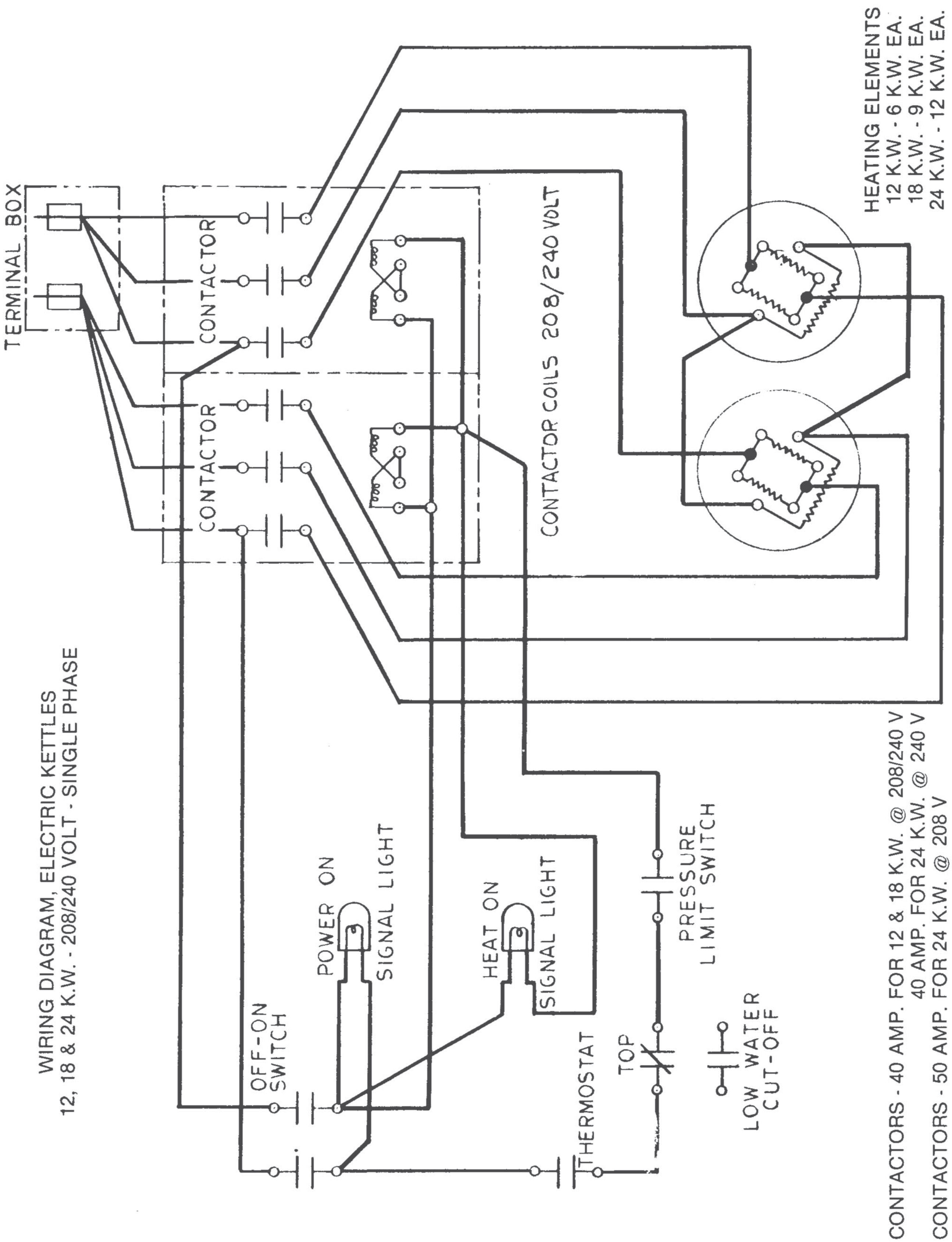
WIRING DIAGRAM



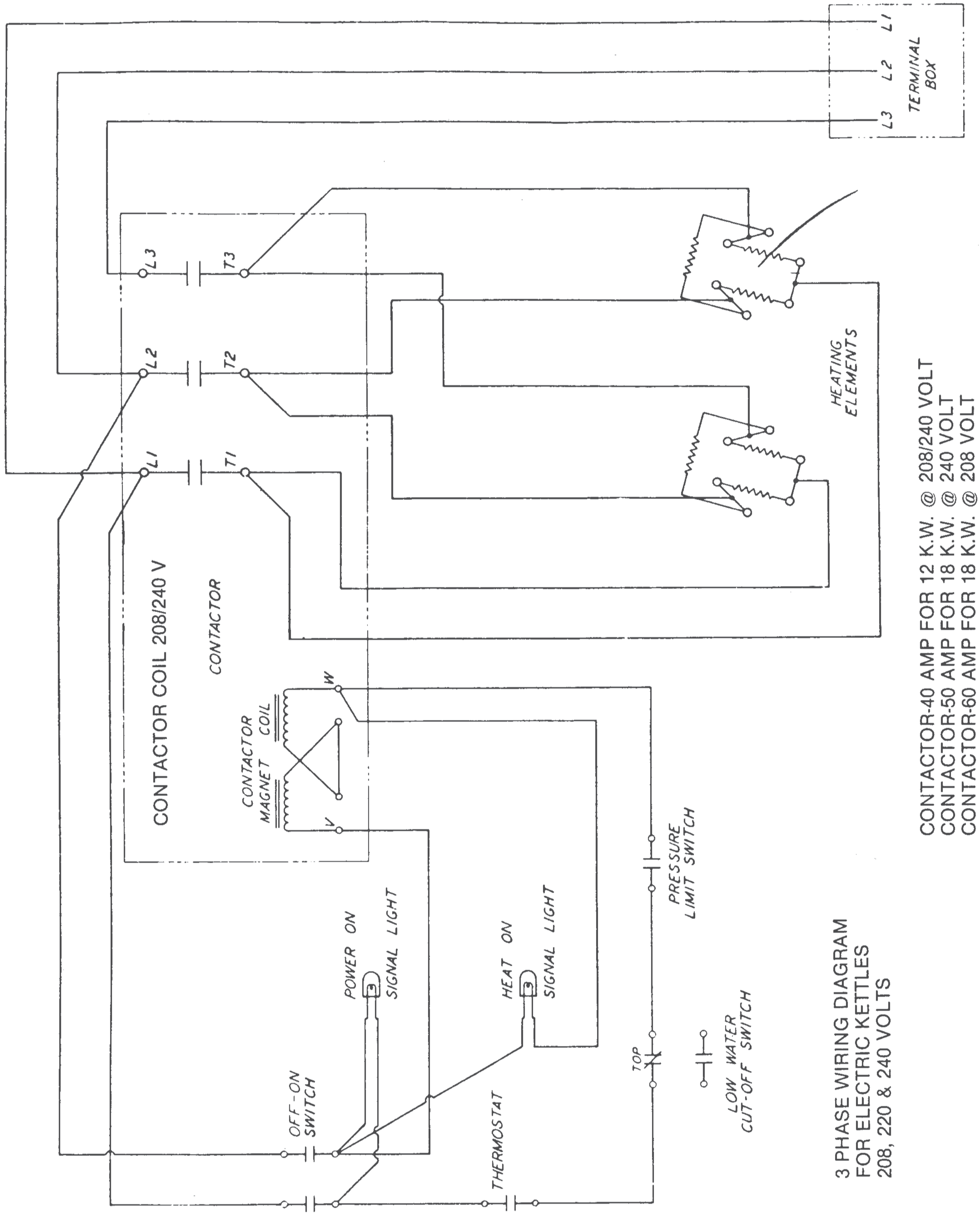
WIRING DIAGRAM



WIRING DIAGRAM



WIRING DIAGRAM

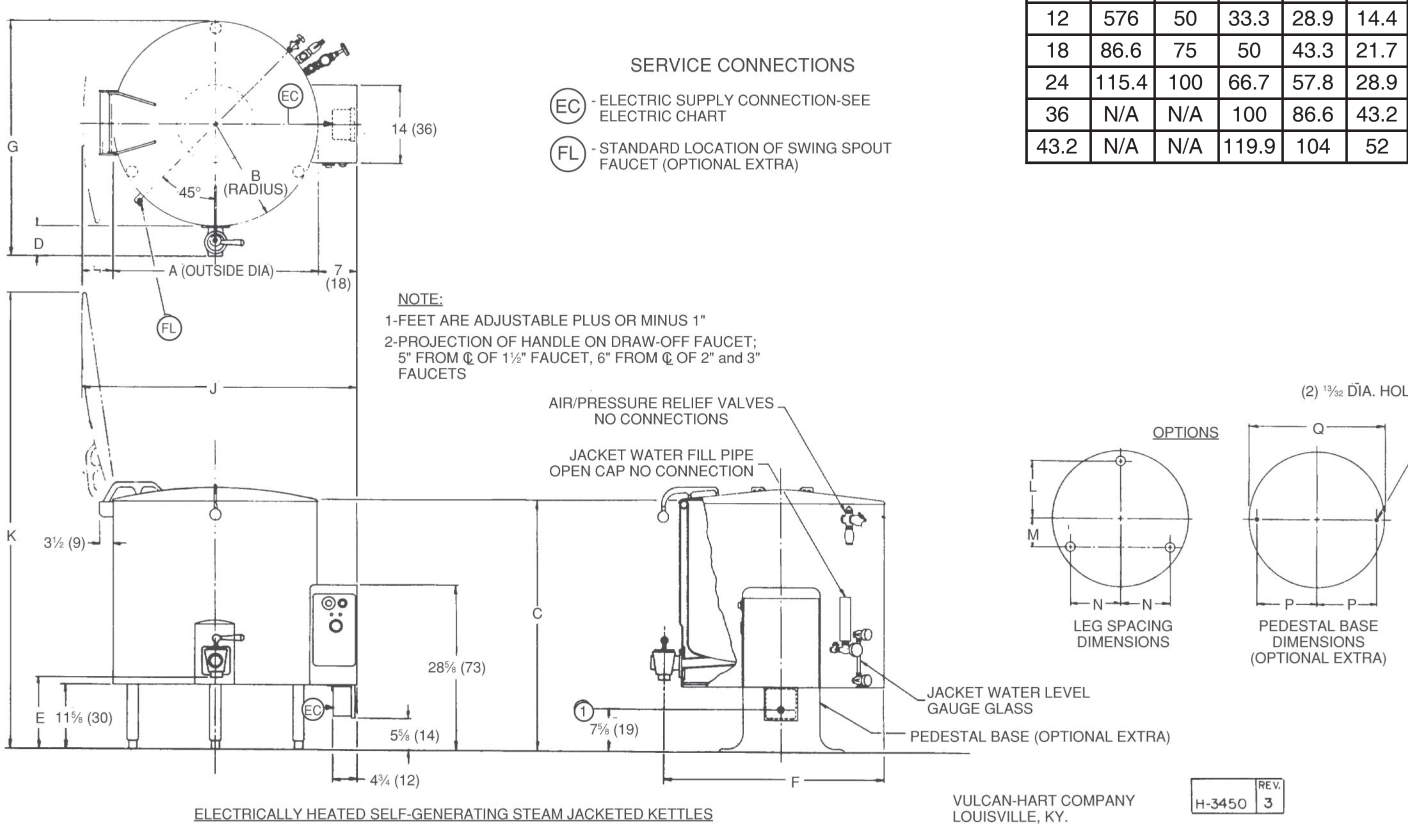


DIMENSIONS AND SERVICE CONNECTIONS

DIMENSIONS – ENGLISH																							
	Gallons		Kilowatts		Inches																		
Model	Capacity		Input					2" Draw-Off				3" Draw-Off											
No.	Full	Wkg.	Std.	High	A	B	C	D	E	F	G	D	E	F	G	H	J	K	L	M	N	P	Q
ES25	25	21	18	24	29	14 1/2	32	3 11/16	13	30 5/8	32 3/4	6 1/8	14	32 1/2	35	10 3/4	45 1/2	61	13 1/2	6 3/8	11 3/4	8 1/4	18 1/2
ES30	30	23	18	24	29	14 1/2	32	3 11/16	13	30 5/8	32 3/4	6 1/8	14	32 1/2	35	10 3/4	45 1/2	61	13 1/2	6 3/8	11 3/4	8 1/4	18 1/2
EL40	40	33	24	36	29	14 1/2	36	3 11/16	13	30 5/8	32 3/4	6 1/8	14	32 1/2	35	10 3/4	45 1/2	65 1/4	13 1/2	6 3/8	11 3/4	8 1/4	18 1/2
ES60	60	48	24	36	36 1/2	18 1/4	35	3 11/16	13	38 1/4	40 1/8	6 1/8	14	40	42 3/4	13	56 1/2	71	17 1/4	8 3/4	15	10 1/4	22 1/2
EL80	80	68	36	43.2	36 1/2	18 1/4	40	3 11/16	13	38 1/4	40 1/8	6 1/8	14	40	42 3/4	13	56 1/2	76 3/4	17 1/4	8 3/4	15	10 1/4	22 1/2
ET100	100	88	36	43.2	36 1/2	18 1/4	45	3 11/16	13	38 1/4	40 1/8	6 1/8	14	40	42 3/4	13	56 1/2	82	17 1/4	8 3/4	15	10 1/4	22 1/2
ET125	125	113	36	43.2	36 1/2	18 1/4	52	3 11/16	13	38 1/4	40 1/8	6 1/8	14	40	42 3/4	13	56 1/2	88 1/2	17 1/4	8 3/4	15	10 1/4	22 1/2
ET150	150	138	43.2	NA	36 1/2	18 1/4	58 1/2	3 11/16	13	38 1/4	40 1/8	6 1/8	14	40	42 3/4	13	56 1/2	95	17 1/4	8 3/4	15	10 1/4	22 1/2

DIMENSIONS – METRIC																							
	Liters		Kilowatts		Centimeters																		
Model	Capacity		Input					2" Draw-Off				3" Draw-Off											
No.	Full	Wkg.	Std.	High	A	B	C	D	E	F	G	D	E	F	G	H	J	K	L	M	N	P	Q
ES25	95	79	18	24	74	37	81	9	34	78	83	15	37	77	89	27	116	155	34	17	30	20	47
ES30	114	87	18	24	74	37	81	9	34	78	83	15	37	77	89	27	116	155	34	17	30	20	47
EL40	151	125	24	36	74	37	91	9	34	78	83	15	37	77	89	27	116	165	34	17	30	20	47
ES60	227	182	24	36	93	46	89	9	34	98	103	15	37	102	109	33	140	180	44	22	38	26	57
EL80	303	257	36	43.2	93	46	102	9	34	98	103	15	37	102	109	33	140	195	44	22	38	26	57
ET100	319	333	36	43.2	93	46	114	9	34	98	103	15	37	102	109	33	140	208	44	22	38	26	57
ET125	473	428	36	43.2	93	46	132	9	34	98	103	15	37	102	109	33	140	225	44	22	38	26	57
ET150	568	522	43.2	NA	93	46	149	9	34	98	103	15	37	102	109	33	140	241	44	22	38	26	57

TOTAL KW CONN	TOTAL CONNECTED AMPS				
	SINGLE PH		THREE PH		
	208V	240V	208V	240V	480V
12	576	50	33.3	28.9	14.4
18	86.6	75	50	43.3	21.7
24	115.4	100	66.7	57.8	28.9
36	N/A	N/A	100	86.6	43.2
43.2	N/A	N/A	119.9	104	52



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